

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-082934

(43)Date of publication of application : 22.03.2002

(51)Int.Cl.

G06F 17/21  
G06F 17/60

(21)Application number : 2000-271905

(71)Applicant : TOSHIBA CORP

(22)Date of filing : 07.09.2000

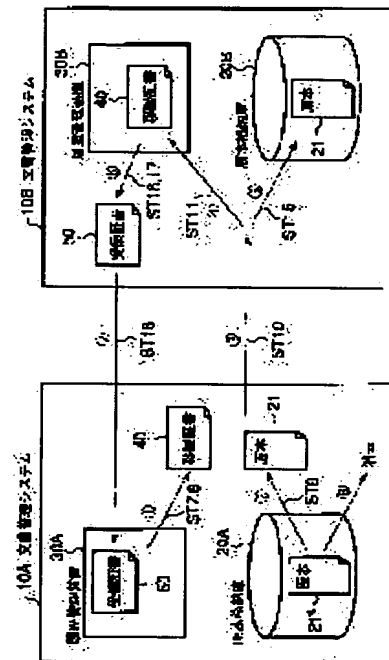
(72)Inventor : NISHIZAWA HIDEKAZU

## (54) HISTORY MANAGING METHOD AND STORAGE MEDIUM

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To move electronic data among plural systems while guaranteeing the originality of the electronic data.

**SOLUTION:** The history information of an operation for an original 21 is recorded in a history managing device 30A, and when the original 21 is moved to the other system 10B, the history information is inputted to a movable certificate 40, and moved together with the original 21.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

CLAIMS

---

[Claim(s)]

[Claim 1] The hysteresis management method which is a hysteresis management method for managing the hysteresis over actuation of the original of electronic data, and guaranteeing the original nature of said electronic data, and is characterized by including the step which records the hysteresis information on the actuation to said original, and the step to which said hysteresis information is moved with said original when moving said original to an alien system.

[Claim 2] The hysteresis management method characterized by including the step which assigns the document ID which identifies said original uniquely based on the system registration ID published by the meaning to the original within the system ID which identifies uniquely the hysteresis management equipment which records said hysteresis information in a hysteresis management method according to claim 1, and said hysteresis management equipment.

[Claim 3] The hysteresis management method characterized by assigning the revision number added for every revision of said original in a hysteresis management method according to claim 2, and including the step which distinguishes the originals of the latest edition, and all the past amendment versions uniquely.

[Claim 4] The hysteresis management method characterized by to be included the step which assigns the hysteresis ID which identifies the hysteresis of said actuation uniquely based on the system hysteresis ID published by the meaning within hysteresis management equipment for every hysteresis of the actuation to the system ID and the original which identifies uniquely the hysteresis management equipment which records said hysteresis information on any 1 term of claim 1 thru/or claim 3 in the hysteresis management method of a publication.

[Claim 5] When a moved material system moves said original to a migration place system in a hysteresis management method according to claim 3 or 4, The step which draws up the migration bond for proving migration of said original, and the step which moves said migration bond and original to a migration place system are included. Said migration bond The hysteresis management method characterized by having the hysteresis ID over said document ID, a revision number, and migration bond creation of self, the epitome value of said original, and said hysteresis information.

[Claim 6] When said migration bond is thought to be the step which receives said migration bond from a said migration former system in a hysteresis management method according to claim 5, The step which draws up the receipt bond for proving the receipt of said migration bond, and the step which moves said receipt bond to a moved material system are included. Said receipt bond The hysteresis management method characterized by having ID of the hysteresis ID over said document ID, a revision number, and receipt bond creation of self, and said migration bond.

[Claim 7] The hysteresis management method characterized by including the step which records the fact of the receipt concerned as hysteresis information when said receipt bond moved from said migration place system is received in a hysteresis management method according to claim 6.

[Claim 8] In a hysteresis management method given in any 1 term of claim 5 thru/or claim 7 By the step into which the document ID of the original and the system ID of a migration place system are inputted, and this input The step which publishes hysteresis ID over said migration

bond creation, and the step which is made to correspond to this hysteresis ID and records said migration bond creation hysteresis as hysteresis information, The hysteresis management method characterized by including the step which draws up said migration bond, and the step to which this migration bond is moved based on the actuation hysteresis over said original, and said migration bond creation hysteresis.

[Claim 9] In a hysteresis management method given in any 1 term of claim 5 thru/or claim 8 The step into which said migration bond is inputted, and the step which publishes hysteresis ID over migration bond receipt by this input, The hysteresis management method characterized by including the step which is made to correspond to this hysteresis ID and records migration bond receipt hysteresis as hysteresis information, the step which draws up said receipt bond based on said migration bond receipt hysteresis, and the step to which this receipt bond is moved.

[Claim 10] The hysteresis management method characterized by including the step into which said receipt bond is inputted, the step which publishes hysteresis ID over a receipt bond receipt by this input, and the step which is made to correspond to this hysteresis ID and records receipt bond receipt hysteresis as hysteresis information in a hysteresis management method according to claim 9.

[Claim 11] It is the hysteresis management method characterized by attaching electronic signature in a hysteresis management method given in any 1 term of claim 5 thru/or claim 10, as for said migration bond.

[Claim 12] The receipt bond for the step which verifies the electronic signature of the migration bond concerned when said migration bond is received in a hysteresis management method according to claim 11 being included, and proving the receipt of said migration bond is a hysteresis management method characterized by attaching electronic signature.

[Claim 13] The hysteresis management method characterized by including the step which verifies the electronic signature of the receipt bond concerned in a hysteresis management method according to claim 12 when said receipt bond is received.

[Claim 14] The hysteresis management method characterized by including the step which doubles the hysteresis information in the last migration bond, and the hysteresis information on actuation of said original in a self system with any 1 term of claim 5 thru/or claim 13 in the hysteresis management method of a publication in the case of creation of this migration bond.

[Claim 15] The hysteresis management method characterized by including the step which records the migration information which contains a migration place system ID at the hysteresis ID over the contents of actuation, and migration bond creation, and a moved material system ID list, and original information including the epitome value of the original as hysteresis information in a hysteresis management method given in any 1 term of claim 5 thru/or claim 14 in the case of creation of said migration bond.

[Claim 16] The hysteresis management method characterized by including the step which records the contents of the Hysteresis ID and the migration bond to the contents of actuation, and migration bond receipt as hysteresis information in the case of creation of the receipt bond for proving the receipt of said migration bond in a hysteresis management method given in any 1 term of claim 5 thru/or claim 15.

[Claim 17] The hysteresis management method characterized by including the step which records the contents of the Hysteresis ID and the receipt bond to the contents of actuation, and a receipt bond receipt as hysteresis information when the receipt bond for proving the receipt of said migration bond is received in a hysteresis management method given in any 1 term of claim 5 thru/or claim 16.

[Claim 18] It is the hysteresis management method characterized by using an XML format for said hysteresis information in a hysteresis management method given in any 1 term of claim 1 thru/or claim 17.

[Claim 19] It is the hysteresis management method characterized by using an XML format for said migration bond in a hysteresis management method given in any 1 term of claim 5 thru/or claim 18.

[Claim 20] The receipt bond for proving the receipt of said migration bond in a hysteresis management method given in any 1 term of claim 5 thru/or claim 19 is a hysteresis management

method characterized by using an XML format.

[Claim 21] It is the storage which is used for the hysteresis management equipment in the system of the plurality for managing the hysteresis over actuation of the original of electronic data, and guaranteeing the original nature of said electronic data and in which computer read is possible. When a moved material system makes a migration place system move said original to the computer of said hysteresis management equipment, The document ID of said original, a revision number, the hysteresis ID over migration bond creation of self The storage with which the program for realizing the function for which the function which draws up the migration bond for proving migration of the original including the epitome value of the original and the hysteresis information over actuation, said migration bond, and the original are moved to a migration place system was memorized and in which computer read is possible.

[Claim 22] It is the storage which is used for the hysteresis management equipment in the system of the plurality for managing the hysteresis over actuation of the original of electronic data, and guaranteeing the original nature of said electronic data and in which computer read is possible. When the function to receive the migration bond for proving migration of said original, and said migration bond are received from a moved material system to the computer of said hysteresis management equipment, The function which draws up the receipt bond for proving the receipt of a migration bond including ID of the hysteresis ID over the document ID of said original, a revision number, and receipt bond creation of self, and said migration bond, The storage with which the program for realizing the function for which said receipt bond is moved to a moved material system was memorized and in which computer read is possible.

[Claim 23] The storage with which the program for realizing the function which records the fact of the receipt concerned as hysteresis information when said receipt bond moved to the computer of said hysteresis management equipment from said migration place system is received in the storage in which computer read according to claim 22 is possible was memorized and in which computer read is possible.

[Claim 24] In the storage in which computer read given in any 1 term of claim 21 thru/or claim 23 is possible To the computer of said hysteresis management equipment, by the input of the document ID of the original, and the system ID of a migration place system The function to publish hysteresis ID over said migration bond creation, the function which is made to correspond to this hysteresis ID and records said migration bond creation hysteresis as hysteresis information, The storage with which the program for realizing the function which draws up said migration bond, and the function to which this migration bond is moved based on the actuation hysteresis over said original and said migration bond creation hysteresis was memorized and in which computer read is possible.

[Claim 25] In the storage in which computer read given in any 1 term of claim 21 thru/or claim 24 is possible The function to publish hysteresis ID over migration bond receipt by the input of said migration bond to the computer of said hysteresis management equipment, The storage with which the program for realizing the function which draws up said receipt bond, and the function to which this receipt bond is moved based on the function which is made to correspond to this hysteresis ID and records migration bond receipt hysteresis as hysteresis information, and said migration bond receipt hysteresis was memorized and in which computer read is possible.

[Claim 26] The storage with which the program for making the computer of said hysteresis management equipment realize the function to publish hysteresis ID over a receipt bond receipt, and the function which is made to correspond to this hysteresis ID and records receipt bond receipt hysteresis as hysteresis information by the input of said receipt bond in the storage in which computer read according to claim 25 is possible was memorized and in which computer read is possible.

[Claim 27] Said migration bond is a storage which is characterized by attaching electronic signature in the storage in which computer read given in any 1 term of claim 21 thru/or claim 26 is possible and in which computer read is possible.

[Claim 28] The receipt bond for the program for realizing the function to verify the electronic signature of the migration bond concerned when said migration bond is received to the computer of said hysteresis management equipment in the storage in which computer read according to

claim 27 is possible being memorized, and proving the receipt of said migration bond is a storage which is characterized by attaching electronic signature and in which computer read is possible.  
[Claim 29] The storage with which the program for realizing the function to verify the electronic signature of the receipt bond concerned was memorized in the storage in which computer read according to claim 28 is possible when said receipt bond was received to the computer of said hysteresis management equipment and in which computer read is possible.

[Claim 30] The storage with which the program for realizing the function to double the hysteresis information in the last migration bond and the hysteresis information on actuation of said original in a self system with the computer of said hysteresis management equipment in the case of creation of this migration bond, in the storage in which computer read given in any 1 term of claim 21 thru/or claim 29 is possible was memorized and in which computer read is possible.

[Claim 31] The storage possible in computer read which memorized in the program for realizing the function which records the migration information which contains a migration place system ID at the hysteresis ID over the contents of actuation, and migration bond creation, and a moved material system ID list, and original information including the epitome value of the original as hysteresis information in the case of creation of said migration bond on the computer of said hysteresis management equipment in the storage in which computer read given in any 1 term of claim 21 thru/or claim 30 is possible.

[Claim 32] The storage which memorized the program for realizing the function which records the contents of the Hysteresis ID and the migration bond to the contents of actuation, and migration bond receipt on the computer of said hysteresis management equipment as hysteresis information in the storage in which computer read given in any 1 term of claim 21 thru/or claim 31 is possible in the case of creation of the receipt bond for proving the receipt of said migration bond and in which computer read is possible.

[Claim 33] The storage which memorized the program for realizing the function which records the contents of the Hysteresis ID and the receipt bond to the contents of actuation, and a receipt bond receipt on it as hysteresis information in the storage in which computer read given in any 1 term of claim 21 thru/or claim 32 is possible when the receipt bond for proving the receipt of said migration bond is received to the computer of said hysteresis management equipment and in which computer read is possible.

---

[Translation done.]

**\* NOTICES \***

JPO and NCIP are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

**DETAILED DESCRIPTION**

---

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the hysteresis management method and storage which can move electronic data among two or more systems, guaranteeing the original nature of electronic data.

[0002]

[Description of the Prior Art] In recent years, the demand which saves the conventional document (henceforth a paper document) indicated by paper as an electronic document is increasing with automation of business.

[0003] However, in case a paper document is saved as an electronic document, when it is necessary to guarantee the original nature (identity with the original) of an electronic document, it is said that each function, such as an alteration prevention function, an implementer's signature function, an access control function, a backup function, and a hysteresis function manager, is required. For this reason, the need for an electronic data management system of saving and managing at insurance the electronic data which constitutes an electronic document is increasing.

[0004] With this kind of electronic data management system, according to research of this invention person, in case the original of electronic data is moved among two or more systems, although the 1st following technique (1) is indispensable and the 2nd technique is not indispensable, it is thought that it is important.

[0005] (1) The technique whose check of the hysteresis of the actuation to the original is enabled from a viewpoint of a guarantee of original nature also by the near system which received the original.

(2) The technique which enables the check of the fact of migration of the original clearly, and makes denial of the fact of migration improper from a viewpoint of hysteresis management also in the case of next audit. However, the electronic data management system with such a technique does not yet exist.

[0006]

[Problem(s) to be Solved by the Invention] Although importance is attached to the technique of the guarantee of the original nature of electronic data, or hysteresis management especially in the electronic data management system as explained above, such a technique does not yet exist.

[0007] This invention was made in consideration of the above-mentioned actual condition, and it aims at offering the hysteresis management method and storage which can move electronic data among two or more systems, guaranteeing the original nature of electronic data.

[0008] Moreover, other purposes of this invention are to offer the hysteresis management method and storage which can prevent denial of the fact of migration in the back, when moving electronic data between each system.

[0009]

[Means for Solving the Problem] Guaranteeing the original nature of electronic data, among two or more systems, it is in the technique which can move electronic data, and the main point of

this invention is a more desirable in addition technique in which next denial prevention is possible. Such a technique is realized by the hysteresis management technique for guaranteeing the original nature of electronic data, the migration technique for moving electronic data among two or more systems, and the denial prevention protocol for preventing denial of the fact of migration in the back.

[0010] For example, a hysteresis management technique is realized by recording the hysteresis information on actuation for every actuation of the original of electronic data. A migration technique is realized by sending the migration bond containing the hysteresis information on actuation, and the hash value of the original with the original. A denial prevention protocol is realized in exchange for the migration bond mentioned above and the receipt bond proving receipt of a migration bond.

[0011] The moved material system of the side to which the original of electronic data is moved publishes a migration bond including hysteresis information, and, specifically, moves a migration bond and original data together. Moreover, the migration place system of the side which receives a migration bond publishes the receipt bond proving having received original data and a migration bond, and returns it to a delivery side. Since the actuation hysteresis over the hash value of original data and original data is included in a migration bond, the original nature of electronic data is guaranteed also in the case of migration. Moreover, denial of a later can be prevented by keeping a migration bond and the receipt bond of each other.

[0012] Now, based on the main point of above this inventions, the following means are specifically provided. This invention is a hysteresis management method for managing the hysteresis over actuation of the original of electronic data, and guaranteeing the original nature of said electronic data, and is a hysteresis management method containing the step which records the hysteresis information on the actuation to said original, and the step to which said hysteresis information is moved with said original when moving said original to an alien system.

[0013] Thereby, electronic data can be moved among two or more systems, guaranteeing the original nature of electronic data.

[0014] Here, this invention may contain the step which assigns the document ID which identifies said original uniquely based on the system registration ID published by the meaning to the original within the system ID which identifies uniquely the hysteresis management equipment which records said hysteresis information, and said hysteresis management equipment.

[0015] Thereby, the original is discriminable among two or more hysteresis management equipments at a meaning. Moreover, this invention may assign the revision number added for every revision of said original, and may contain the step which distinguishes the originals of the latest edition, and all the past amendment versions uniquely. Thereby, the original is uniquely discriminable for every revised edition. Furthermore, this invention may contain the step which assigns the hysteresis ID which identifies the hysteresis of said actuation uniquely based on the system hysteresis ID published by the meaning within hysteresis management equipment for every hysteresis of the actuation to the system ID and the original which identify uniquely the hysteresis management equipment which records said hysteresis information.

[0016] Thereby, the hysteresis of actuation is discriminable among two or more hysteresis management equipments at a meaning.

[0017] Moreover, when a moved material system moves [ this invention ] said original to a migration place system, The step which draws up the migration bond for proving migration of said original, and the step which moves said migration bond and original to a migration place system are included. As said migration bond It is good also as a thing equipped with the hysteresis ID over said document ID, a revision number, and migration bond creation of self, the epitome value of said original, and said hysteresis information.

[0018] Thus, since the migration bond was equipped with hysteresis information, the original nature of electronic data can be guaranteed also in the case of migration, and since the migration bond was equipped with the epitome value of the original, the alteration in the middle of migration etc. is verifiable.

[0019] Furthermore, when this invention thinks said migration bond to be the step which receives said migration bond from a said migration former system, The step which draws up the

receipt bond for proving the receipt of said migration bond, and the step which moves said receipt bond to a moved material system are included. As said receipt bond It is good also as a thing equipped with ID of the hysteresis ID over said document ID, a revision number, and receipt bond creation of self, and said migration bond.

[0020] Thus, since it is the configuration of returning a receipt bond when a migration bond is received, denial of the fact of migration in the back can be prevented by keeping a migration bond and a receipt bond. Moreover, when this invention receives said receipt bond moved from said migration place system, it may contain the step which records the fact of the receipt concerned as hysteresis information.

[0021] This invention by furthermore, the step into which the document ID of the original and the system ID of a migration place system are inputted and this input The step which publishes hysteresis ID over said migration bond creation, and the step which is made to correspond to this hysteresis ID and records said migration bond creation hysteresis as hysteresis information, Based on the actuation hysteresis over said original, and said migration bond creation hysteresis, the step which draws up said migration bond, and the step to which this migration bond is moved may be included.

[0022] Thereby, in the moved material system by the side of delivery, processing from creation of a migration bond to migration can be performed easily and certainly.

[0023] Moreover, this invention may contain the step into which said migration bond is inputted, the step which publishes hysteresis ID over migration bond receipt by this input, the step which is made to correspond to this hysteresis ID and records migration bond receipt hysteresis as hysteresis information, the step which draws up said receipt bond based on said migration bond receipt hysteresis, and the step to which this receipt bond moves.

[0024] Thereby, in the migration place system by the side of a receptacle, processing to creation and migration of a receipt bond can be performed easily and certainly from the receipt of a migration bond, and its record.

[0025] Furthermore, this invention may contain the step into which said receipt bond is inputted, the step which publishes hysteresis ID over a receipt bond receipt by this input, and the step which is made to correspond to this hysteresis ID and records receipt bond receipt hysteresis as hysteresis information.

[0026] Thereby, in the moved material system by the side of delivery, the receipt of a receipt bond and its record can be performed easily and certainly.

[0027] Moreover, as for this invention, electronic signature may be attached as said migration bond. Furthermore, this invention contains the step which verifies the electronic signature of the migration bond concerned when said migration bond is received, and, as for the receipt bond for proving the receipt of said migration bond, electronic signature may be attached. Moreover, when this invention receives said receipt bond, it may contain the step which verifies the electronic signature of the receipt bond concerned.

[0028] Thus, since electronic signature is attached to a migration bond or a receipt bond, the alteration of a receipt bond or a receipt bond can be prevented.

[0029] Furthermore, this invention may contain the step which doubles the hysteresis information in the last migration bond, and the hysteresis information on actuation of said original in a self system in the case of creation of this migration bond.

[0030] By this, the original and a migration bond can be received from a certain system, the original can be operated by the self system, and actuation at the time of saying that the original and a migration bond are moved to a different system from said a certain system after that can be performed easily and certainly.

[0031] Moreover, this invention may contain the step which records the migration information which contains a migration place system ID in the hysteresis ID over the contents of actuation, and migration bond creation, and a moved material system ID list, and original information including the epitome value of the original as hysteresis information in the case of creation of said migration bond. Thereby, the creation hysteresis of a migration bond is certainly [ easily and ] recordable.

[0032] Furthermore, this invention may contain the step which records the contents of the



Hysteresis ID and the migration bond to the contents of actuation, and migration bond receipt as hysteresis information in the case of creation of the receipt bond for proving the receipt of said migration bond. Thereby, the creation hysteresis of a receipt bond is certainly [ easily and ] recordable.

[0033] Moreover, when this invention receives the receipt bond for proving the receipt of said migration bond, it may contain the step which records the contents of the Hysteresis ID and the receipt bond to the contents of actuation, and a receipt bond receipt as hysteresis information. Thereby, the receipt hysteresis of a receipt bond is certainly [ easily and ] recordable.

[0034] Furthermore, an XML format may be used for this invention as said hysteresis information. Moreover, an XML format may be used as said migration bond. Moreover, an XML format may be used as a receipt bond for proving the receipt of said migration bond. Thus, compatibility and conspicuousness can be raised by using an XML format.

[0035] Furthermore, from the storage which memorized the program for realizing each of that step and in which computer read is possible, the above-mentioned invention may install a program in the computer of hysteresis management equipment, and may be realized. Even if such, the operation mentioned above and the same operation can be done so.

[0036]

[Embodiment of the Invention] Hereafter, 1 operation gestalt of this invention is explained with reference to a drawing. In addition, this invention is invention of the hysteresis management for proving the fact of migration of hysteresis management of the original when moving the original of electronic data to the hysteresis management equipment of another side from one hysteresis management equipment, and migration in denial improper, and since the moving method of original data is arbitrary, it omits a publication.

[0037] Moreover, each hysteresis management equipment has the function which it became independent of for hysteresis management, the inclusion to the existing documentation management system is possible for it, and it makes the original movable easily, guaranteeing original nature between each system.

[0038] Moreover, although each bonds are electronic data, and the format of arbitration can express if required information is included, in this specification, the notation by the XML (eXtensible Markup Language) format is shown as an example from a viewpoint of compatibility and conspicuousness.

[0039] Moreover, since the detail of the verification approach is unrelated to operation of this invention in the signature approach list used for each bonds, a publication is omitted. As an example, standard XML-Signature and the standard public key authentication base (PKI) for W3C (world wide web consortium) are available.

[0040] Next, 1 operation gestalt of this invention is explained to a detail. Drawing 1 is the mimetic diagram showing the outline configuration of two or more organizations as two or more electronic data management systems concerning 1 operation gestalt of this invention, and drawing 2 is the mimetic diagram showing the concrete configuration of the documentation management system in \*\*\*\*\*.

[0041] Each organizations A and B are the same configurations mutually, and are mutually connected through the Internet 1. Computer PCa and documentation-management-system 10A are mutually connected through LAN to Gateway G Wa by which Organization A was connected to the Internet 1. Computer PCb and documentation-management-system 10B are mutually connected for Organization B through LAN like Organization A from Gateway GWb. In addition, a or A of a tail of a sign shows the element belonging to Organization A, and b or B of a tail of a sign shows the element belonging to Organization B.

[0042] Here, in addition to the function of the usual computer, Computers PCa and PCb have the acknowledgement function by actuation of an operator in the display-function list of the original in the function and documentation-management-system 10A which input directions of original migration into documentation management systems 10A and 10B, and 10B.

[0043] Gateway G Wa and GWb is omissible suitably, although arranged from a viewpoint of insurance at the outlet of LAN. Documentation management systems 10A and 10B have the function which is equipped with the original hangars 20A and 20B and the hysteresis

management equipments 30A and 30B, in addition communicates between documentation-management-system 10A and 10B via a network, the function which communicates with calculating machines PCa and PCb, classification / retrieval function of electronic data, etc., as shown in drawing 2 . In addition, documentation management systems 10A and 10B and/or the hysteresis management equipments 30A and 30B are realizable by installing the program for realizing the function for example, in server equipment from a storage.

[0044] The original hangars 20A and 20B are storage with which original 21\* of electronic data is stored by documentation management systems 10A and 10B possible [ read-out/store ].

[0045] Hysteresis management equipments 30A and 30B have the function manage hysteresis, such as the new registration and the check-out (revisable condition) to each original, check-in (revision improper condition), and deletion, and are carrying out that implementation of a guarantee and hysteresis management of original nature is possible among each organizations A and B by issue and the transmitting function of the migration bond 40 mentioned later, issue, a transmitting function of the receipt bond 50 which mentions later, etc.

[0046] Specifically, the hysteresis management equipments 30A and 30B are equipped with the hysteresis tables 31A and 31B, the I/F control functions 32A and 32B, the migration bond creation functions 33A and 33B, the migration bond add functions 34A and 34B, the receipt bond creation functions 35A and 35B, the receipt bond add functions 36A and 36B, the signature functions 37A and 37B, and the signature verification functions 38A and 38B, as shown in drawing 3 .

[0047] The hysteresis tables 31A and 31B are tables which record the hysteresis of the actuation to original 21\*, and the contents of record are expressed with an XML format as shown in drawing 4 . In addition, the contents of record of the hysteresis tables 31A and 31B may be expressed with other formats not only including an XML format but the same information.

[0048] The contents of record are expressed by the set of the LogItem element with which the hysteresis tables 31A and 31B consist of each Log element as a child element. The no attribute of the <LogItem> tag expresses the consecutive numbers of the hysteresis within hysteresis management equipment 30A and 30B. New hysteresis is added after the newest hysteresis for every addition of the hysteresis accompanying actuation of the original. The Operation attribute of the <Log> tag expresses actuation of the original, and the child elements of a Log element differ according to the contents of actuation. The Log element is the same as the Log element of the hysteresis list 45 mentioned later.

[0049] The function in which the I/F control functions 32A and 32B receive 'a migration bond creation demand', 'a migration bond receipt demand', or 'a receipt bond receipt demand' from the self documentation management systems 10A and 10B, The function to input a reception beam 'a migration bond creation demand' into the migration bond creation functions 33A and 33B, The function to input a reception beam 'a migration bond receipt demand' and a migration bond into the migration bond add functions 34A and 34B and the receipt bond creation functions 35A and 35B, The function to input a reception beam 'a receipt bond receipt demand' into the receipt bond add functions 36A and 36B, It has the function which turns and outputs the receipt bond 50 which received from the migration bond 40 or the receipt bond creation functions 35A and 35B which were received from the migration bond creation functions 33A and 33B to other documentation management systems 10B and 10A.

[0050] In addition, a migration bond creation demand is inputted into the I/F control functions 32A and 32B from the self documentation management systems 10A and 10B, when drawing up the migration bond 40 for original migration.

[0051] A migration bond receipt demand is inputted into the I/F control functions 32A and 32B from the self documentation management systems 10A and 10B, when the migration bond 40 is sent from other documentation management systems 10B and 10A.

[0052] A receipt bond receipt demand is inputted into the I/F control functions 32A and 32B from the self documentation management systems 10A and 10B, when the receipt bond 50 is sent from other documentation management systems 10B and 10A.

[0053] If a migration bond creation demand is received from the I/F control functions 32A and

32B, the migration bond creation functions 33A and 33B will draw up the migration bond 40 with reference to a hysteresis table, will give the signature by the signature functions 37A and 37B to the migration bond 40 concerned, and will output it to the I/F control functions 32A and 32B.

[0054] The migration bond add functions 34A and 34B are functions to register this migration bond receipt hysteresis into the hysteresis tables 31A and 31B, after verifying the migration bond 40 which received from the I/F control functions 32A and 32B by the signature verification functions 38A and 38B.

[0055] If a receipt bond creation demand is received from the I/F control functions 32A and 32B, the receipt bond creation functions 35A and 35B will draw up the receipt bond 50 with reference to the hysteresis tables 31A and 31B, will give the signature by the signature functions 37A and 37B to the receipt bond 50 concerned, and will output it to the I/F control functions 32A and 32B.

[0056] The receipt bond add functions 36A and 36B are functions to register this receipt bond receipt hysteresis into the hysteresis tables 31A and 31B, after verifying the receipt bond 50 which received from the I/F control functions 32A and 32B by the signature verification functions 38A and 38B.

[0057] The signature functions 37A and 37B have the function give electronic signature to the migration bond drawn up by the migration bond creation functions 33A and 33B, and return the migration bond creation functions 33A and 33B concerned, and the function give electronic signature to the receipt bond 50 drawn up by the receipt bond creation functions 35A and 35B, and return to the receipt bond creation functions 35A and 35B concerned.

[0058] The function which the signature verification functions 38A and 38B verify the signature given to the migration bond 40 which received from the migration bond add functions 34A and 34B, and notifies a verification result to the migration bond add functions 34A and 34B concerned, It has the function which verifies the signature given to the receipt bond 50 which received from the receipt bond add functions 36A and 36B, and notifies a verification result to the receipt bond add functions 36A and 36B concerned, and the function to verify the signature given to the hysteresis list.

[0059] Here, the migration bond 40 is equipped with the bond name 41, the ID information 42, the migration information 43, the original information 44, and the hysteresis list 45 as shown in drawing 5. Signature 40S are attached to the migration bond 40. The bond name 41 expresses the class of bond and a 'migration bond' is indicated here. The information from which the ID information 42 discriminates a bond is indicated. The ID information itself is the identifier attached not only like a bond but like the actuation hysteresis over the original. ID information on a bond is the same as the hysteresis ID at the time of bond issue.

[0060] The ID information 42 consists of 425 at the time of a document ID 421, a revision number 422, hysteresis ID 423, the hysteresis number 424, and the hysteresis date of issue, as shown in drawing 6 and drawing 7. Even if a document ID 421 is ID of a meaning and has revision and migration of a document to a document, it takes the same value.

[0061] A document ID 421 serves as the system ID 4211 which shows the hysteresis management equipment with which a meaning was given to the hysteresis management equipments 30A and 30B, and the original was newly registered from the system registration ID 4212 published by the meaning within hysteresis management equipment 30A and 30B at the time of new registration in order to assign ID of a meaning to the original 21 between hysteresis management equipment 30A and 30B.

[0062] A revision number 422 is a number which sets the original of new registration to 0 and is added for every revision of the original. With the combination of this document ID 40 and revision number 422, allocation of ID of a meaning is enabled to the whole sentence document from the new registration version to the latest edition.

[0063] Hysteresis ID 423 is ID attached to each actuation of registration of the original, check-out, check-in, migration, copy issue, and deletion whenever the contents of actuation are recorded on the hysteresis tables 31A and 31B, and ID of a meaning is assigned to actuation between hysteresis management equipment 30A and 30B.

[0064] Hysteresis ID 423 serves as the system ID 4231 of the hysteresis management

equipment with which actuation was performed from the system hysteresis ID 4232 published with the hysteresis management equipment like a document ID. Even if the one original moves various documentation management systems, the hysteresis of the contents of actuation for every system can be checked by hysteresis ID 423.

[0065] The hysteresis number 424 is a number added whenever it sets the original of new registration to 0, and a bond is published or hysteresis is added with actuation of the original, and it is attached in order to clarify sequence of the time series of hysteresis.

[0066] The time in which the original was operated and 425 was registered into hysteresis is indicated at the time of the hysteresis date of issue. Next, other elements of return and the migration bond 40 are explained to drawing 5. The migration information 43 consists of a moved material system ID 431 and a migration place system ID 432, as shown in drawing 5 and drawing 8.

[0067] As the original information 44 is shown in drawing 5 and drawing 9, it consists of the ID information 441, an original name 442, and a hash value 443, and the original which is the newest revised edition is specified, and the information which shows by which system the original was registered when is included. In addition, about the tag of the ID information 42 mentioned above, the element is omitted for the simplicity of a publication. The drawing of an XML format omits and describes a duplication part like the following.

[0068] As for the ID information 441, the information on the 425th grade is indicated at the time of the hysteresis ID 423 to which the latest edition of the original was given at the time of check-in, a revision number 422, and the hysteresis date of issue.

[0069] The original names 442 are identifiers, such as a file name about the latest edition of the original, or URL.

[0070] A hash value 443 is a hash value (or epitome value acquired with other epitome functions) obtained from the latest edition of the original by the Hash Function, and information, such as a hash algorithm, the encoding approach, and code value, is indicated.

[0071] When moving between documentation management systems to the original, the migration bond 40 is attached together with the original, is sent, and is enabling the check of correspondence with the original based on the hash value 443 within the original information 44. As the hysteresis list 45 is shown in drawing 5 and drawing 10, the hysteresis of the actuation to the original is indicated by time series. Each hysteresis in the hysteresis list 45 contains three of required parameter \*\*s according to ID information, the contents of actuation, and the contents of actuation at least.

[0072] As for the line of the beginning of the hysteresis list 45, 45h of migration bond creation hysteresis the hysteresis 451 at the time of new registration of the original is indicated to be, and indicates the hysteresis of creation of migration bond 40 self to be to a last line is indicated. An example at the time of writing the hysteresis list 45 in an XML format is put on below. The hysteresis list 45 is the set of a Log element, and the whole set is surrounded with the <Logs> tag. The Operation attribute of the <Log> tag expresses the actuation performed to the original, and the child elements of a Log element differ according to the contents of actuation.

[0073] Although hysteresis, such as new registration and check-out, is indicated by the hysteresis list 45 of drawing 10, by the following explanation, only the hysteresis related to migration is explained, and since other actuation is indicated similarly, it omits detailed explanation. As hysteresis about migration, there are three kinds, 'migration bond creation', 'migration bond receipt', and a 'receipt bond receipt'. In addition, according to the XML format, the migration bond 40 is drawn up as shown in drawing 11.

[0074] 45h of migration bond creation hysteresis consists of 1, and the ID information (IDInfo element) 42, the migration information (TransferInfo element) 43 and the original information 44 mentioned above the 45h (Log Operation) of the contents of actuation so that it may be shown in the second half of drawing 12 and drawing 1313. 'Migration bond creation' is indicated by 1 the 45h of the contents of actuation. In addition, although not illustrated, the time of the hysteresis date of issue is indicated for the system hysteresis ID newly numbered by the SystemLogID element of an IDInfo element by the LogIssureDate element again.

[0075] The migration bond receipt hysteresis 46 is the hysteresis tables 31B and 31A managed

with the hysteresis management equipments 30B and 30A by the side of the sink of the original, and as shown in drawing 14 and drawing 15, the contents 47 of actuation, the ID information 48, and the migration bond information 49 are included. As for the contents 47 of actuation (Log Operation), 'migration bond receipt' is indicated. The system hysteresis ID (SystemLogID element) for which the ID information (IDInfo element) 48 was newly numbered by the system ID by the side of the sink of the original besides a document ID and a revision number and migration bond receipt, and the time at the time of hysteresis registration (LogIssureDate element) are indicated. As for the migration bond information (TransferDocumentInfo element) 49, the ID information 42, the migration information 43, and the original information 44 are indicated among the information in the migration bond 40.

[0076] On the other hand, as the receipt bond 50 is shown in drawing 16 and drawing 17, it consists of the bond name 51, ID information 48, and migration bond information 49, and signature 50S are given to the whole like the migration bond 40. As for the bond name 51, a 'receipt bond' is indicated. It is shown that they are the ID information 48 and the migration bond information 49 which were indicated by the migration bond receipt hysteresis 46 for which the ID information 48 and the migration bond information 49 were added to the hysteresis tables 31B and 31A, and a bond corresponding to [ are the same contents, respectively and ] the migration bond 40 in the receipt bond 50.

[0077] As the receipt bond receipt hysteresis 60 is shown in drawing 18 - drawing 20 R> 0, the contents 61 of actuation, the ID information 62, and the receipt bond information 63 are included. As for the contents 61 of actuation, a 'receipt bond receipt' is indicated. The time in the newly numbered system hysteresis ID besides a document ID and a revision number and hysteresis creation time as well as other ID information 48 is indicated by the ID information 62. The ID information 48 on a receipt bond is indicated among the information in the receipt bond 50 from a viewpoint which identifies the receipt bond 50 which received the receipt bond information 63.

[0078] Next, actuation of the electronic data management system constituted as mentioned above is explained with reference to the flow chart of drawing 21 - drawing 23. In addition, the case where documentation-management-system 10A of Organization A moves the original in original hangar 20A to documentation-management-system 10B of Organization B is described. In addition, since the same is said of migration in the organization A contrary to this from Organization B, the publication is omitted.

[0079] Moreover, in documentation-management-system 10A, the original is newly registered beforehand. In the case of this new registration, each following step (i) - (iii) are performed. Moreover, a step (ii) and (iii) are performed for every actuation of not only new registration but henceforth.

[0080] (i) Step which assigns the document ID which identifies the original uniquely based on the system registration ID published by the meaning to the original within the system ID which identifies uniquely the hysteresis management equipment which records hysteresis information, and hysteresis management equipment.

[0081] (ii) Step which assigns the revision number added for every revision of the original, and distinguishes the originals of the latest edition, and all the past amendment versions uniquely. In addition, a revision number is set to 0 in the case of new registration.

[0082] (iii) The step which assigns the hysteresis ID which identifies the hysteresis of actuation uniquely based on the system hysteresis ID published by the meaning within hysteresis management equipment for every hysteresis of the actuation to the system ID and the original which identify uniquely the hysteresis management equipment which records hysteresis information. In addition, at the time of new registration, the hysteresis of actuation is 'new registration'.

[0083] Thereby, new registration of the original is completed and the actuation after receiving the original is managed. The original actuation in drawing 24 expresses the possible (authorization) condition or improper (disapproval) condition of actuation over the originals, such as check-out, check-in, deletion, and copy issue. Since the preservation duty (executive responsibility) of data exists in the middle of exchange of a migration bond even when original

actuation is impossible, cautions are required. The introduction organization A has managed the original and has executive responsibility.

[0084] Now, documentation-management-system 10A shall hold Original A in the operational condition. Here, by actuation of an operator, Computer PCa will input into documentation-management-system 10A the migration bond creation demand which has these document IDs and a migration place system ID as a parameter, if the document ID of original 21\* and the system ID of a migration place system are inputted.

[0085] Documentation-management-system 10A inputs this migration bond creation demand into hysteresis management equipment 30A, and it inputs this migration bond creation demand into migration bond creation function 33A while I/F control function 32A receives a migration bond creation demand (ST1), as shown in drawing 21 and drawing 2525.

[0086] Migration bond creation function 33A creates the hysteresis list 45 while reading the list of the hysteresis information about a document ID from hysteresis table 31A (ST2), as shown in drawing 26.

[0087] In addition, in moving the original moved from other documentation-management-system 10X to still more nearly another documentation-management-system 10B, as shown in drawing 27, the hysteresis in the migration bond 50 which received in the preceding paragraph of the hysteresis in hysteresis table 31A from former documentation-management-system 10X is added (from migration bond receipt to migration bond creation) (from new creation of the original to migration bond creation), and it creates the hysteresis list 45.

[0088] Next, migration bond creation function 33A judges whether migration of the original 21 is possible based on a hysteresis list (ST3). Since it cannot move when the condition of having been checked out in the hysteresis list 45, the already deleted condition, and the corresponding original itself have not been registered, an error is outputted (ST4) and processing is ended.

[0089] That the original 21 is movable is only the case where the newest hysteresis is 'new registration', 'check-in', 'copy issue', or 'migration bond receipt'. When movable, system hysteresis ID is newly published, and as shown in drawing 13, 45h of migration bond creation hysteresis is newly added to the tail of hysteresis table 31A (ST5).

[0090] Moreover, as shown in drawing 28, migration bond creation function 33A adds the same hysteresis as 45h of this added migration bond creation hysteresis also to the hysteresis list 45 (ST6), and surrounds it with the <Logs> tag.

[0091] After an appropriate time, migration bond creation function 33A draws up the migration bond 40 based on the information on the hysteresis list 45 and others (ST7). As the migration bond 40 is electronic data and was shown in drawing 5, a moved material system ID and a migration place system ID are indicated to be the hash value of the original 21, and the hysteresis of the actuation before receiving the original 21, and signature 40S of hysteresis management equipment 30A are further attached by signature function 37A (ST8). In the case of XML, the migration bond 40 shown in drawing 11 is drawn up.

[0092] When hysteresis management equipment 30A draws up a migration bond, in Organization A, it becomes impossible to original operate it (drawing 24), and although Organization A is the owner of the original, it will be in a hold condition.

[0093] Documentation-management-system 10A copies original 21\* in original hangar 20A, and generates the original 21 (ST9). Original 21\* becomes backup (bracing document) of the original 21.

[0094] Documentation-management-system 10A transmits the migration bond 40 and the original 21 to documentation-management-system 10B through an I/F control function at a step ST 8 (ST10).

[0095] In addition, as shown in drawing 24, when a migration bond is received by hysteresis management equipment 30B of Organization B, the owner of the original 21 becomes Organization B. The executive responsibility for the original 21 occurs in Organization B in coincidence, and the actuation to the original 21 becomes possible in Organization B.

[0096] At this time, since receipt completion of the original 21 in Organization B is unknown, the executive responsibility of original 21\* did not need to disappear, but Organization A needs to manage original 21\* of backup in preparation for the notice of resending from Organization B.

[0097] In documentation-management-system 10B, if the migration bond 40 and the original 21 are received, the hash value of the original 11 will be calculated and it will check that it is the same as that of the hash value of a publication in a bond 10.

[0098] After this check, documentation-management-system 10B generates the migration bond receipt demand which has the migration bond 40 as a parameter, and inputs this migration bond receipt demand into hysteresis management equipment 30B.

[0099] As shown in drawing 22 and drawing 29, I/F control function 32B receives a migration bond receipt demand, and inputs hysteresis management equipment 30B into migration (ST11) bond add function 34B.

[0100] Migration bond add function 34B verifies signature 40S of the migration bond 40 by signature verification function 38B about this migration bond receipt demand (ST12).

[0101] When there is a problem by this verification, resending of data is required of documentation-management-system 10A of delivery origin. In addition, in not being just signature 40S, an error is outputted and it ends processing (ST13).

[0102] Moreover, if the purport which are the original 21 and the right original 21 with which the migration bond 40 was transmitted from documentation-management-system 10A is checked by verification of a step ST 12, migration bond add function 34B stores the migration bond 40 in hysteresis management equipment 30B while it newly numbers the system hysteresis ID and registers the migration bond receipt hysteresis 46 into the tail of hysteresis table 31B (ST14). The migration bond 40 becomes the proof which proves the purport that the original 21 was received from documentation-management-system 10A later. Moreover, documentation-management-system 10B stores the original 21 in original hangar 20B (ST15).

[0103] After hysteresis management equipment 30B draws up the receipt bond 50 which indicated the purport that the original 21 was received by receipt bond creation function 35B (ST16) and attaches signature 50S by signature function 37B further, it transmits the receipt bond 50 to documentation-management-system 10A through I/F control function 32B (ST18).

[0104] In documentation-management-system 10A, if the receipt bond 50 is received, the receipt bond receipt demand which has the receipt bond 50 as a parameter will be generated, and this receipt bond receipt demand will be inputted into hysteresis management equipment 30A.

[0105] As shown in drawing 23 and drawing 30, I/F control function 32A receives a receipt bond receipt demand, and inputs hysteresis management equipment 30A into receipt (ST19) bond add function 36B.

[0106] Receipt bond add function 36B verifies signature 50S of the receipt bond 50 by signature verification function 38A (ST20).

[0107] When signature 50S are not the just signature attached by a partner's documentation-management-system 10B, an error is outputted and processing (ST21) is ended. When signature 50S are a just signature, the system hysteresis ID is newly numbered, the receipt bond receipt hysteresis 60 is registered into the tail of hysteresis table 31A (ST22), and the receipt bond 50 is registered into hysteresis management equipment 30A. This receipt bond 50 serves as proof of documentation-management-system 10B having received the original 21. In addition, in documentation-management-system 10A, it is at the registration time of the receipt bond 50, and executive responsibility disappears, and since the need of keeping original 21\* for backup is lost, the original 21\* concerned is deleted. In addition, although it may continue keeping it according to the policy of Organization A, without deleting original 21\*, future original nature is not guaranteed.

[0108] There are two aspects of affairs with migration of the hysteresis by the migration, the migration bond 40, and the receipt bond 50 of the data itself of the original 21, and while original nature can be guaranteed by the hash value, the hysteresis of migration is manageable in the above original migration model, in denial improper with the migration bond 40 and the receipt bond 50.

[0109] Since this hysteresis information (hysteresis list 45) is put into the migration bond 40 and it is made to move with the original 21 when recording the hysteresis information on the actuation to the original 21 on hysteresis table 31A according to this operation gestalt as

mentioned above, and moving the original 21 to alien-system 10B, electronic data can be moved among two or more systems, guaranteeing the original nature of electronic data.

[0110] Moreover, since the document ID 421 which identifies the original 21 uniquely is assigned based on the system registration ID 4212 published by the meaning to the original 21 within the system ID 4211 which identifies uniquely hysteresis management equipment 30A which records hysteresis information, and hysteresis management equipment 30A, the original is uniquely discriminable between two or more hysteresis management equipment 30A and 30B.

[0111] Moreover, since the revision number 421 added for every revision of the original 21 is assigned and the originals of the latest edition and all the past amendment versions are distinguished uniquely, the original is uniquely discriminable for every revised edition.

[0112] Furthermore, since the hysteresis ID 423 which identifies the hysteresis of actuation uniquely based on the system hysteresis ID 4232 published by the meaning within hysteresis management equipment 30A is assigned for every hysteresis of the actuation to the system ID 4231 and the original 21 which identify uniquely hysteresis management equipment 30A which records hysteresis information, the hysteresis of actuation is uniquely discriminable between two or more hysteresis management equipment 30A and 30B.

[0113] Moreover, although it has Hysteresis ID (hysteresis number 424), the epitome value (hash value 443) of the original, and hysteresis information (hysteresis list 45) over a document ID 421, a revision number 422, and migration bond creation of self as a migration bond 40. Since the migration bond was especially equipped with hysteresis information, the original nature of electronic data can be guaranteed also in the case of migration, and since the migration bond was equipped with the epitome value of the original, the alteration in the middle of migration etc. is verifiable.

[0114] Furthermore, since it is the configuration of returning the receipt bond 50 when the migration bond 40 is received, denial of the fact of migration in the back can be prevented by keeping the migration bond 40 and the receipt bond 50. Moreover, since the migration place of the original can be grasped, the existence of an outflow of the text to a third person can be managed, and it can contribute to protection of privacy. Moreover, it sets to documentation-management-system 10A by the side of delivery. By the input of the document ID 421 of the original 21, and the system ID 432 of migration place system 10B Publish hysteresis ID over migration bond creation, make it correspond to this hysteresis ID, and it records on hysteresis table 31A by making 45h of migration bond creation hysteresis into hysteresis information. Since the migration bond 40 is drawn up based on the actuation hysteresis and 45h of migration bond creation hysteresis over the original 21 and the migration bond 40 is moved, from creation of the migration bond 40 to migration can be performed easily and certainly.

[0115] Moreover, it sets to documentation-management-system 10B by the side of a receptacle. By the input of the migration bond 40, hysteresis ID over migration bond receipt is published. Since make it correspond to this hysteresis ID, it records on hysteresis table 31B by making migration bond receipt hysteresis 46 into hysteresis information, the receipt bond 50 is drawn up based on migration bond receipt hysteresis and this receipt bond 50 is moved Processing to creation and migration of the record to the receipt of the migration bond 40 and the receipt bond 50 can be performed easily and certainly.

[0116] Furthermore, in documentation-management-system 10A by the side of delivery, since publish hysteresis ID over a receipt bond receipt, it is made to correspond to this hysteresis ID and it records on hysteresis table 31A by making receipt bond receipt hysteresis 60 into hysteresis information by the input of the receipt bond 50, the receipt of the receipt bond 50 and its record can be performed easily and certainly.

[0117] Moreover, since electronic signature 40S and 50S is attached to the migration bond 40 or the receipt bond 50, the alteration of the receipt bond 40 or the receipt bond 50 can be prevented.

[0118] Furthermore, the hysteresis information in the last migration bond 40 and the hysteresis information on actuation of the original in system 10A of self are doubled in the case of creation of this migration bond 40. For this reason, the original and a migration bond can be received from a certain system, that original can be operated by the self system, and actuation at the time of



saying that the original 21 and the migration bond 40 are moved to a different system from said a certain system after that can be performed easily and certainly.

[0119] Moreover, since the migration information 43 which contains the migration place system ID 432 in the hysteresis ID over 1 and migration bond creation and moved material system ID 431 list the 45h of the contents of actuation, and the original information 44 containing the hash value 443 of the original are recorded as hysteresis information in the case of creation of the migration bond 40, 45h of migration bond creation hysteresis is certainly [ easily and ] recordable.

[0120] Furthermore, since the contents of the Hysteresis ID and the migration bond 40 to the contents of actuation and migration bond receipt are recorded as hysteresis information in the case of creation of the receipt bond 50, the receipt bond creation hysteresis 46 is certainly [ easily and ] recordable.

[0121] Moreover, since the contents of the Hysteresis ID and the receipt bond 50 to the contents 61 of actuation and a receipt bond receipt are recorded as hysteresis information when the receipt bond 50 is received, the receipt bond receipt hysteresis 61 is certainly [ easily and ] recordable.

[0122] Furthermore, compatibility and conspicuousness can be raised by using an XML format as hysteresis information, the migration bond 40, and a receipt bond 50.

[0123] Moreover, from the storage which memorized the program for realizing each of that step and in which computer read is possible, a program may be installed in the computer of the hysteresis management equipments 30A and 30B, and you may realize, and even if this operation gestalt is such, it can do so similarly the effectiveness mentioned above.

[0124] In addition, as a storage in this invention, a magnetic disk, a floppy (trademark) disk, a hard disk, optical disks (CD-ROM, CD-R, DVD, etc.), magneto-optic disks (MO etc.), semiconductor memory, etc. can memorize a program, and as long as it is the storage which a computer can read, the storage format may be which gestalt.

[0125] Moreover, a part of each processing for MW(s) (middleware), such as OS (operating system) which is working on a computer based on directions of the program installed in the computer from the storage, and database management software, network software, etc. to realize this operation gestalt may be performed.

[0126] Furthermore, the storage which the storage in this invention downloaded the program transmitted by not only the medium that became independent of a computer but LAN, the Internet, etc., and was memorized or stored temporarily is also contained.

[0127] Moreover, a storage may be contained in the storage in this invention not only one but when processing in this operation gestalt is performed from two or more media, and a medium configuration may be which configuration.

[0128] In addition, the computers in this invention may be which configurations, such as a system by which network connection of the equipment which performs each processing in this operation gestalt, and consists of one, such as a personal computer, based on the program memorized by the storage, and two or more equipments was carried out.

[0129] Moreover, the device which can realize the function of this invention by the program, and equipment are named the computer in this invention generically not only including a personal computer but including a processing unit, a microcomputer, etc. which are contained in an information management system.

[0130] in addition, the invention in this application is not limited to each above-mentioned operation gestalt, and in the range which does not deviate from the summary, many things are boiled and it can be deformed at an execution phase Moreover, each operation gestalt may be combined as suitably as possible, and may be carried out, and the effectiveness together put in that case is acquired. Furthermore, invention of various phases is included in each above-mentioned operation gestalt, and various invention may be extracted by the proper combination in two or more configuration business indicated. For example, when invention is extracted from all the requirements for a configuration shown in an operation gestalt by some requirements for a configuration being omitted, and carrying out the extracted invention, an abbreviation part is suitably compensated with a common knowledge common use technique.

[0131] In addition, in the range which does not deviate from the summary, this invention deforms variously and can be carried out.

[0132]

[Effect of the Invention] As explained above, according to this invention, electronic data is movable among two or more systems, guaranteeing the original nature of electronic data. Moreover, when moving electronic data between each system, denial of the fact of migration in the back can be prevented.

---

[Translation done.]

**\* NOTICES \***

JPO and NCIP are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

**DESCRIPTION OF DRAWINGS**

---

[Brief Description of the Drawings]

[Drawing 1] The mimetic diagram showing the outline configuration of two or more organizations as two or more electronic data management systems concerning 1 operation gestalt of this invention.

[Drawing 2] The mimetic diagram showing the concrete configuration of the documentation management system of each organization in this operation gestalt.

[Drawing 3] The block diagram showing the configuration of the hysteresis management equipment in this operation gestalt.

[Drawing 4] The mimetic diagram showing an example of the contents of record in this operation gestalt in an XML format.

[Drawing 5] The mimetic diagram showing the configuration of the migration bond in this operation gestalt.

[Drawing 6] The mimetic diagram showing the configuration of ID information in this operation gestalt.

[Drawing 7] The mimetic diagram showing an example of ID information in this operation gestalt in an XML format.

[Drawing 8] The mimetic diagram showing an example of the migration information in this operation gestalt in an XML format.

[Drawing 9] The mimetic diagram showing an example of the original information in this operation gestalt in an XML format.

[Drawing 10] The mimetic diagram showing an example of the hysteresis list in this operation gestalt in an XML format.

[Drawing 11] The mimetic diagram showing an example of the migration bond in this operation gestalt in an XML format.

[Drawing 12] The mimetic diagram showing the configuration of the migration bond creation hysteresis in this operation gestalt.

[Drawing 13] The mimetic diagram showing an example of the contents of record including the migration bond creation hysteresis in this operation gestalt in an XML format.

[Drawing 14] The mimetic diagram showing the configuration of the migration bond receipt hysteresis in this operation gestalt.

[Drawing 15] The mimetic diagram showing an example of the migration bond receipt hysteresis in this operation gestalt in an XML format.

[Drawing 16] The mimetic diagram showing the configuration of the receipt bond in this operation gestalt.

[Drawing 17] The mimetic diagram showing an example of the receipt bond in this operation gestalt in an XML format.

[Drawing 18] The mimetic diagram showing the configuration of the receipt bond receipt hysteresis in this operation gestalt.

[Drawing 19] The mimetic diagram showing the first half of an example of the contents of record including the receipt bond receipt hysteresis in this operation gestalt in an XML format.

[Drawing 20] The mimetic diagram showing the second half of an example of the contents of

record including the receipt bond receipt hysteresis in this operation gestalt in an XML format.

[Drawing 21] The flow chart for explaining the actuation in this operation gestalt.

[Drawing 22] The flow chart for explaining the actuation in this operation gestalt.

[Drawing 23] The flow chart for explaining the actuation in this operation gestalt.

[Drawing 24] The sequence diagram showing the condition of each working organization in this operation gestalt.

[Drawing 25] The block diagram for explaining the actuation in this operation gestalt.

[Drawing 26] The mimetic diagram showing an example of the hysteresis list in this operation gestalt in an XML format.

[Drawing 27] The mimetic diagram for explaining the actuation in this operation gestalt.

[Drawing 28] The mimetic diagram showing an example of the hysteresis list in this operation gestalt in an XML format.

[Drawing 29] The block diagram for explaining the actuation in this operation gestalt.

[Drawing 30] The block diagram for explaining the actuation in this operation gestalt.

[Description of Notations]

1 -- Internet

A, B -- Organization

GWa, GWb -- Gateway

PCa, PCb -- Computer

10A, 10B -- Documentation management system

20A, 20B -- Original hangar

21 21\* -- Original

30A, 30B -- Hysteresis management equipment

31A, 31B -- Hysteresis table

32A, 32 B -- I/F control function

33A, 33B -- Migration bond creation function

34A, 34B -- Migration bond add function

35A, 35B -- Receipt bond creation function

36A, 36B -- Receipt bond add function

37A, 37B -- Signature function

38A, 38B -- Signature verification function

40 -- Migration bond

40S -- Signature

41 51 -- Bond name

42, 441, 48, 62 -- ID information

421 -- Document ID

4211 4231 -- System ID

4212 -- System registration ID

422 -- Revision number

423 -- Hysteresis ID

4232 -- System hysteresis ID

424 -- Hysteresis number

425 -- At the time of the hysteresis date of issue

43 -- Migration information

431 -- Moved material system ID

432 -- Migration place system ID

44 -- Original information

442 -- Original name

443 -- Hash value

45 -- Hysteresis list

45h -- Migration bond creation hysteresis

46 -- Migration bond receipt hysteresis

47 61 -- The contents of actuation

49 -- Migration bond information

- 50 -- Receipt bond
- 60 -- Receipt bond receipt hysteresis
- 63 -- Receipt bond information

---

[Translation done.]